

What is claimed is:

1. A method for manufacturing MTJ cell of MRAM comprising:

5 forming a metal layer for connection layer connected to a semiconductor substrate through a lower insulating layer;

forming a pinned magnetic layer on the metal layer;

physically impacting a surface of the pinned magnetic
10 layer with an atom to form an amorphous layer thereon;

sequentially forming a tunneling barrier layer, a free magnetic layer and a MTJ capping layer on the amorphous layer; and

patterning the MTJ capping layer, the free magnetic
15 layer, the tunneling barrier layer, amorphous layer and the pinned magnetic layer using a MTJ cell mask to form a MTJ cell.

2. The method according to claim 1, wherein the atom
20 is selected from the group consisting of P or As.